What is claimed is:

1. A WDM (wavelength division multiplex) optical system comprising:

a WDM combiner to provide a source signal;

at least one transmitter coupled to the WDM combiner;

a broadband noise source; and

filter circuitry coupled between the broadband noise source and the WDM combiner.

2. The WDM optical system of claim 1, wherein the filter circuitry is an optical notch filter.

3. The WDM optical system of claim 2, wherein:

each transmitter of the at least one transmitter provides a corresponding information signal;

the optical notch filter is characterized by a stop band that blocks signals at wavelengths corresponding to each information signal that is provided by a transmitter of the at least one transmitter; and

the optical notch filter is further characterized by a pass band that passes optical signals at wavelengths not within the stop band.

4. The WDM optical system of claim 1, wherein the filter circuitry includes:

a WDM demultiplexer to provide a plurality of noise signals;

a plurality of filters, each filter coupled to a respective noise signal of the plurality of noise signals; and

a WDM multiplexer coupled through at least one filter of the plurality of filters to respective noise signals.

5. The WDM optical system of claim 1, wherein each transmitter of the at least one transmitter provides a corresponding information signal, and the filter circuitry includes:

a WDM demultiplexer to provide noise signals at a plurality of wavelengths; and

a WDM multiplexer coupled to combine a zero signal at wavelengths corresponding to each information signal that is provided by a transmitter of the at least one transmitter, the WDM multiplexer being further coupled to combine a noise signal at each wavelength of the plurality of wavelengths not corresponding to an information signal that is provided by a transmitter of the at least one transmitter.

6. The WDM optical system of claim 1, further comprising:

an optical repeater; and

an optical cable coupled to carry the source signal to the optical repeater.

7. The optical system of claim 1, further comprising:

a plurality of linked optical repeaters; and

an optical cable coupled to carry the source signal to a first optical repeater.

8. A method of providing a source signal comprising steps of:

transmitting information in at least one information signal;

filtering noise from a broadband noise source to provide a filtered noise signal; and

combining the filtered noise signal and the at least one information signal into the source signal.

9. The method of claim 8 wherein the step of filtering includes blocking optical signals at wavelengths within a stop band with an optical notch filter while passing optical signals at wavelengths not within the stop band.

10. The method of claim 8, wherein the step of filtering includes:

demultiplexing the noise from the broadband noise source into a plurality of noise signals ordered according to wavelength; and

multiplexing at least one of the plurality of noise signals to provide the filtered noise signal.

11. The method of claim 8, wherein the step of filtering includes:

demultiplexing the noise from the broadband noise source into noise signals at a plurality of wavelengths; and

multiplexing a portion of the noise signals and a zero optical signal to become the filtered optical signal, the step of multiplexing combining the zero optical signal at wavelengths corresponding to each information signal of the at least one information signal and combining a noise signal at each wavelength of the plurality of wavelengths not corresponding to an information signal of the at least one information signal.

12. The method of claim 8, further comprising steps of:

coupling the source signal over an optical cable to an optical repeater; and

amplifying the source signal in the optical repeater.